REMARKS

Applicant, his principal representatives in Germany, and the undersigned have carefully reviewed the first Office Action of March 6, 2003 in the above-identified U.S. patent application, together with the prior art cited and relied on by the Examiner in the rejections of the claims. In response, the claims of the application have been amended. It is believed that the claims now pending in the subject patent application are patentable. Reexamination and reconsideration of the application, and allowance of the claims, is respectfully requested.

The subject application discloses, and claims, a printing unit of a rotary printing press. The printing unit includes at least one forme cylinder, such as forme cylinder 01 depicted in Fig. 1, which includes a cylinder barrel that has spaced cylinder barrel ends 05 and 10. These cylinder barrel ends include first and second forme cylinder barrel end support surfaces 09 and 15. A forme cylinder intermediate support ring 03 is located spaced between the forme cylinder barrel ends. This intermediate support ring 03 has an outer support surface.

As may be seen more clearly in Figs. 2 and 3, the forme cylinder, now identified at 23, is placed in contact with a blanket cylinder or transfer cylinder 37 and with an ink transfer cylinder 22. Alternatively, the forme cylinder 22 could be placed in direct contact with an ink roller. In either configuration, the forme cylinder 23 is situated in contact with an ink unit. That ink unit includes either the ink transfer cylinder 27, the ink roller 21, or

both. Both the ink transfer cylinder 22 and the ink roller 21 have barrel ends and an intermediate support ring. The barrel ends are shown at 97, 38, 49, and 51 in Fig. 2. The ink roller 21 has an intermediate support ring at 24 while the ink transfer cylinder 27 has an intermediate support ring at 26. This ring or these rings engage, either directly or indirectly, the intermediate support ring 27 on the forme cylinder 23, again as seen most clearly in Figs. 2 and 3.

In the first Office Action of March 6, 2003, the Examiner objected to the drawings as including reference numerals 20, 86 and 87 not recited in the specification of the application. The drawings were also objected to as not showing the features recited in Claims 47 and 48.

In response, paragraphs 0015 and 0021 of the Substitute Specification have been amended. Paragraph 0015 now recites that the support devices 03,04 have a support surface 20. Support for this recitation is provided in the List of Reference Numerals portion of the verified translation. While the verified translation was canceled in favor of the Substitute Specification, it did constitute the specification of the application, as filed. Replacement paragraph 0021 adds reference numerals 86 and 87 which designate a printing plate and a rubber blanket, respectively. Again, these reference numbers and the elements that they designate were set forth in the List of Reference Numerals. The addition of these reference numerals to the Substitute Specification is believed to overcome the Examiner's objection to the drawings under 37 C.F.R. 1.84(p)(5). Further, these additions are believed not to constitute any new matter.

Claims 47 and 48 have been canceled. It is believed that the cancellation of these claims renders the Examiner's objection to the drawings under 37 C.F.R. 1.83(a) moot.

Claims 41, 43-48, 50-52 and 54-56 were rejected under 35 U.S.C. 103(a) as being unpatentable over U.S. Patent No. 170,542 to Firm in view of U.S. Patent No. 5,249,522 to Kusch et al. Claim 42 was rejected over Firm in view of Kusch et al. and further in view of U.S. Patent No. 1,733,707 to Wood. Claim 49 was rejected as being unpatentable over Firm in view of Kusch et al. and further in view of U.S. Patent No. 6,408,747 to Koppelkamm et al. Claim 53 was rejected over Firm in view of Kusch et al. and further in view of U.S. Patent No. 5,558,021 to Erhard et al.

The references cited by the Examiner, and applied against the claims, have been carefully reviewed. Claim 41, as presented in the Second Preliminary Amendment, has been amended. It is believed that the claims now pending in the subject patent application are patentable over the prior art cited and relied on by the Examiner for the following reasons.

Referring initially to the Firm patent, and as seen most clearly in Figs. 2-5, there is provided a perfecting press that is useable to print on both sides of webs that pass between form cylinders A and A′ and impression cylinders B and B′. The form cylinders A and A′ carry forms or plates. The impression cylinders B and B′ have resilient blankets or covers. An ink roller is shown at D in Figs. 2, 3 and 4.

The form cylinders A and A′ are provided with annular bearings or rings a or a′. The impression cylinders B and B′ are provided with annular bearings or rings b or b′. As seen

most clearly in Figs. 2 and 5, these annular bearings or rings a or a′ and b or b′ are situated generally in the middle of their respective cylinders and contact each other. The inking roller D, as may be seen in Fig. 2, has a central cut or divide at d. As discussed at the top left column on page 2 of Firm, the central cut or divide at d on the surface of the inking rollers is for the purpose of keeping the intermediate bearing rings or surfaces a and b of the form and impression cylinders free of ink.

It is clear that the Firm reference teaches directly away from the structure of the printing unit recited in amended Claim 41. Firm clearly shows that the inking cylinder D has a central recess or slot instead of an intermediate support ring. While Firm shows bearings or rings on the form and impression cylinders, it clearly shows that the use of such a ring on the inking roller is not appropriate. Firm teaches directly away from the structure recited in Claim 41 of the subject application, as filed, and even more clearly as amended.

The teachings missing from the Firm reference are not presented by the Kusch et al. patent. In Kusch et al., there is disclosed a device for adjusting the circumferential register in a rotary printing machine. Kusch et al. recites that bearer rings 3 can be carried by a cylinder body 2.

The cylinder may be "...a plate cylinder or an impression cylinder, or other cylinder.", as recited at Column 4, lines 19 and 20. The bearing ring 3 can be configured to engage a similar ring on a neighboring cylinder.

The teachings of Kusch et al. do not overcome the absence of any teaching or

suggestion in the Firm reference of the use of an intermediate support ring on a cylinder of an ink unit. The plate cylinder or impression cylinder of Kusch et al. are the same as the form cylinder and impression cylinder of Firm. Kusch et al. may teach the use of bearer rings on the ends of plate and impression cylinders, but it clearly does not teach or suggest the use of any intermediate rings and thus cannot provide the teachings missing from Firm. At best, Kusch et al. could be argued as providing a teaching of the presence of bearer rings on the ends of the form and impression cylinders of Firm. Thus, Claim 41, as filed, and even more clearly as amended, is believed to be patentable over the combination of Firm and Kusch et al. as cited and relied on by the Examiner.

All of the other claims pending in the subject application depend, either directly or indirectly, from believed allowable amended Claim 41. Thus, they are also believed to be allowable. With respect to Claim 42, while the Wood reference may show a multiple width printing press with an ink unit including both ink rollers and ink transfer cylinders, it does not show or suggest that either of the cylinders or rollers in the ink unit could be provided with an intermediate support ring that engages a similar ring on the forme cylinder. Thus, Wood does not overcome the basic failing of the Firm reference.

The individual recitations of Claims 43-46, 50-52, 54 and 55 may be taught or suggested by either Firm or Kusch et al., or both. However, as indicated above, there is no teaching in Firm or Kusch et al. of the structure recited in amended Claim 41. Thus, claims 43-46, 50-52, 54 and 55 are also believed to be patentable based on their dependence from Claim 41.

With respect to Claim 49, Koppelkamm et al. appears to show an offset printing unit that includes transfer cylinders 3 and 4. These function as impression cylinders which appear to have multiple blankets 14.1 axially along their length. However, Koppelkamm et al. does not teach or suggest the use of intermediate support devices. Accordingly, it does not overcome the absence of such a teaching in either Firm or Kusch et al.

Claim 53 recites that a plane defined by the form cylinder and the at least one ink roller and ink transfer cylinder extends horizontally. The Erhard et al. reference shows a printing device for printing plastic cards. Three cylinders 16, 17, and 18 are arranged in a horizontal plane. Cylinder 16 is a screen cylinder, cylinder 17 is an ink transfer cylinder and cylinder 18 is a forme cylinder. While Erhard et al. appears to meet the language of dependent claim 53, it clearly provides no teaching of intermediate support rings associated with these cylinders. As such, Erhard et al. fails to provide or to suggest the teachings which are missing from Firm or Kusch et al. Thus, Claim 53 is also believed to be patentable.

The several additional prior art references cited by the Examiner, but not relied on in the rejections of the claims, have been reviewed. Since they were not applied against the claims, no further discussion thereof is believed to be required.

SUMMARY

The specification of the application has been amended to provide several reference numerals which were originally omitted. No new matter has been added. Claim 41 has been amended, Claims 47 and 48 have been canceled and Claims 42-46 and 49-56 have

been carried forward. It is believed that all of the claims now pending in the subject patent application are patentable over the prior art cited and relied on by the Examiner, taken either singly or in combination. Allowance of the claims, and passage of the application to issue is respectfully requested.

Respectfully submitted,

Hans-Bernhard BOLZA-SCHÜNEMANN
Applicant

JONES, TULLAR & COOPER, P.C.
Attorneys for Applicant

Douglas R. Hanscom
Reg. No. 26, 600

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JONES, TULLAR & COOPER, P.C.
P.O. Box 2266 Eads Station
Arlington, Virginia 22202
(703) 415-1500
Attorney Docket P1.1547PCT-US

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[0015] As represented in Fig. 1, the forme cylinders 01, or rubber blanket cylinders 02, in accordance with the invention have respective support devices 03, 04 within their barrel lengths m, for example centered, through which it is made possible to introduce forces, or counterforces, into them and in this way to maintain a support surface 20 of the support devices 03, or 04, in contact of a predeterminable intensity with support devices of immediately adjoining cylinders/rollers/spindles. For example, the support devices 03, 04 can be made from special steel in the form of highly accurate true-running, preferably endless support rings, so-called "Schmitz rings". The support devices 03, 04, which are advantageously provided between the left, 05 , and right cylinder barrel end 10 - they can be, but do not necessarily have to be in the center of the barrel, for example - will be called "intermediate support rings" for short in what follows. The support devices can also be arranged outside of the barrel center.

[0021] However, in the embodiment in accordance with Fig. 1 it would also be possible to pull up endless printing forme sleeves 86 and rubber blanket sleeves 87 interchangeably. This is in particular possible in an arrangement in which only one intermediate support device 03, or 04, per cylinder 01, 02 is provided, and no cuter support rings 09, 15 are provided.

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41. (Amended) A printing unit of a rotary printing press comprising:

at least one forme cylinder;

a forme cylinder barrel, said forme cylinder barrel having spaced first and second forme cylinder barrel ends including [with] first and second forme cylinder barrel end support surfaces;

a forme cylinder intermediate support ring with a forme cylinder intermediate support ring [an] outer support surface, said forme cylinder intermediate support ring being positioned between said spaced first and second forme cylinder barrel ends; and

an ink unit, said ink unit having at least one of an ink roller and an ink transfer cylinder, said at least one of said ink roller and said ink transfer cylinder having barrel ends, said at least one of said ink roller and said ink transfer cylinder barrel ends having barrel end support surfaces, said at least one of said ink roller and said ink transfer cylinder further having an intermediate support ring with an outer surface between said barrel ends, said intermediate support ring outer surface[s] of said forme cylinder intermediate support ring acting against said intermediate support ring outer surface of said intermediate support ring of said at least one of said ink roller and said ink transfer cylinder [each other] and said barrel end support surfaces of said forme cylinder barrel and of said at least one of said ink roller and said ink transfer cylinder barrel acting against each other.